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# Program and Abstracts

## Twenty-Fourth International Conference on Antiviral Research

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Sponsored by

**The International Society For  
Antiviral Research**

Kempinski Hotel Zografski Sofia

Sofia, Bulgaria

May 8 – May 11, 2011

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## Organization

# International Society for Antiviral Research and Twenty-Fourth International Conference on Antiviral Research

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### The International Society For Antiviral Research (ISAR)

The Society was organized in 1987 as a non-profit scientific organization for the purpose of advancing and disseminating knowledge in all areas of antiviral research. To achieve this objective, the Society organizes an annual meeting. The Society is now in its twenty fourth year of existence, and has about 550 members representing 30 countries. For membership application forms or further information, please contact Dr. Susan Cox, Secretary, ISAR; Senior Vice President, Drug Development, Avexa Ltd., 576 Swan Street, Richmond, VIC 3121, Australia, Telephone +(61 3) 9208 4066; Fax +(61 3) 9208 4004; E-mail: scox@avexa.com.au. Membership application forms will also be available at the Conference Registration desk, or from our website [www.isar-icar.com](http://www.isar-icar.com).



# Contributors to the 24th International Conference on Antiviral Research



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## Additional Support Provided by:

Office of AIDS Research, National Institutes of Health, Bethesda, MD, USA

**KEYNOTE ADDRESS**

**“Emerging Virus Infections and Intervention Strategies”**

Albert (ADME) Osterhaus, Ph.D.

Sunday, May 8, 2011

5:00 – 6:00 PM

**MINI-SYMPOSIA**

**"Emerging Diseases and Antiviral Therapy"**

Monday, May 9, 2011

8:00 A.M. – 12:00 P.M.

**“Clinical Update on Antiviral Drugs”**

Tuesday, May 10, 2011

2:00 – 4:00 P.M.

**“Medicinal Chemistry and Drug Discovery**

Wednesday, May 11, 2011

8:00 A.M. – 12:00 PM.

**SOCIAL EVENTS**

**Opening Reception**

with light hors d'oeuvres

Sunday, May 8, 2011

6:00 – 8:00 PM

**Conference Banquet**

Wednesday May 11, 2011

Reception 7:15 PM

Dinner and Program 7:45 – 10:00 PM

***All Scientific and Social Events will be held in the  
Kempinski Hotel Zografski Sofia, Sofia, Bulgaria***

# **Final Program**

## **Twenty-Fourth International Conference on Antiviral Research**

Sponsored by the

**International Society for Antiviral Research**

**Kempinski Hotel Zograski Sofia**  
Sofia, Bulgaria

May 8 – May 11, 2011

**Sunday, May 8, 2011****Interactive Workshop: Drug Discovery and Development 101**

Chair(s): Angel Galabov, Ph.D., Joseph Colacino, Ph.D., and Phillip Furman, Ph.D.  
Sofia 1 and 2

02:00 PM - 04:00 PM

**Opening Greetings**

Sofia 1 and 2

14:00 PLENARY: Raina Fichorova, M.D., Ph.D. Brigham and Women's Hospital, Boston, USA  
Vaginal Microbicides - Key Points of a Winning Strategy and Impact on the Mucosal Barrier

04:30 PM - 05:00 PM

16:30 Welcome to the 24th ICAR: Joseph Colacino, Ph.D., President-ISAR.

16:40 Welcome to Sofia: Angel Galabov, Ph.D., Local Host- 24th ICAR.

16:55 Introduction of the Keynote Speaker: Phillip Furman, Ph.D., President-Elect-ISAR.

**Keynote Address**

Chair(s): Phillip Furman, Ph.D.  
Sofia 1 and 2

05:00 PM - 06:00 PM

1. Emerging Virus Infections and Intervention Strategies.  
Albert (ADME) Osterhaus  
Erasmus Medical Center, The Netherlands

**Opening Reception**

Sofia 1 and 2

06:00 PM - 08:00 PM

**Monday, May 9, 2011****Oral Session 1: Mini-Symposium - Emerging Diseases and Antiviral Therapy**

Chair(s): Mike Bray, Ph.D.  
Sofia 1 and 2

08:00 AM - 12:00 PM

- 08:00 2. Does Antiviral Therapy Have a Role in the Control of Japanese Encephalitis.  
Ernest Gould, Ph.D.  
Université de La Méditerranée, France
- 08:40 3. Opportunities to Test New Therapies Against Crimean-Congo Hemorrhagic Fever.  
Onder Ergonul, Ph.D.  
Marmara University, Medical School, Turkey

09:20 BREAK.

- 09:50 4. Structural and Functional Elements to Consider RNA Capping as a Target for Antivirals in (+) RNA Viruses.  
Bruno Canard, Ph.D.  
CNRS-Université de la Méditerranée, France
- 10:30 5. Filoviral iVLPs Systems: From Basic Research to Antiviral Drug Screening.  
Stephan Becker, Ph.D.  
Philipps-Universität, Germany
- 11:10 6. The Challenge of Emerging Viruses.  
Mike Bray, Ph.D.  
NIAID, NIH, USA

**Oral Session 2: Hepatitis Viruses**

Chair(s): Johan Neyts, Ph.D. and Angela Lam, Ph.D.  
Sofia 1 and 2

02:00 PM - 04:00 PM

- 14:00 7. PLENARY: New Insights into the Hepatitis C Virus Replication Cycle and Impact for Known and Novel Drug Targets.  
Ralf Bartenschlager, Ph.D.  
University of Heidelberg, Germany

- 14:45 8. IDX375, A Novel Allosteric HCV Polymerase Inhibitor: *In Vitro* Antiviral Activity and Preclinical Profile.  
C.B. Dousson<sup>1</sup>, S.S. Good<sup>2</sup>, M. La Colla<sup>2</sup>, J. Bilello<sup>2</sup>, M. Seifer<sup>2</sup>, D.N. Standring<sup>2</sup>, J.-L. Paparin<sup>1</sup>, D. Surleraux<sup>1</sup>  
<sup>1</sup>Idenix Pharmaceuticals, Parc Euromedecine, Montpellier, France, <sup>2</sup>Idenix Pharmaceuticals, Inc., Cambridge, MA, United States
- 15:00 9. Study of NS5B Oligomerization by FRET: Characterization and Inhibition.  
Itxaso Bellón-Echeverría<sup>1</sup>, Alberto J. López-Jiménez<sup>1,2</sup>, Pilar Clemente-Casares<sup>1</sup>, Jose A. Encinar<sup>4</sup>, Elisa Martínez-Alfaro<sup>2</sup>, Ricardo Pérez-Flores<sup>3</sup>, Antonio Mas<sup>1</sup>  
<sup>1</sup>Centro Regional de Investigaciones Biomédicas(CRIB), Albacete, Spain, <sup>2</sup>Disease Infectious Unit, Complejo Hospitalario Universitario de Albacete, Albacete, Spain, <sup>3</sup>Digestive Department, Complejo Hospitalario Universitario de Albacete, Albacete, Spain, <sup>4</sup>Instituto de Biología Molecular y Celular. Universidad Miguel Hernandez, Elche, Spain
- 15:15 10. *In vitro* Selection of HCV Replicons with Reduced Sensitivity to PSI-352938, a Cyclicphosphate Prodrug of  $\beta$ -D-2'- $\alpha$ -F-2'- $\beta$ -C-METHYLGUANOSINE.  
Angela M Lam, Christine Espiritu, Shalini Bansal, Holly M. Micolochick Steuer, Veronique Zennou, Michael J. Otto, Phillip A Furman  
Pharmasset, Inc, Princeton, New Jersey, United States
- 15:30 11. Human subtilase Site-1 Protease (S1P): an emerging host cell target for hepatitis C virus (HCV) infection and HCV-associated steatogenesis.  
Andrea D. Olmstead, François Jean  
University of British Columbia, Vancouver, BC, Canada
- 15:45 12. DMPK and Metabolism Studies of Nucleoside Phosphoramidates Including INX-08189, a Novel Double Pro-drug and Clinical Candidate for Hepatitis C Virus Therapy.  
Jeff T. Hutchins<sup>1</sup>, Christopher McGuigan<sup>2</sup>, Stanley D. Chamberlain<sup>1</sup>, Karolina W. Madela<sup>2</sup>, Mohamed Aljarah<sup>2</sup>, John Vernachio<sup>1</sup>, Joseph M. Patti<sup>1</sup>, Geoffrey Henson<sup>1</sup>  
<sup>1</sup>Inhibitex, Alpharetta, GA, United States, <sup>2</sup>Cardiff University, Cardiff, United Kingdom

### Tuesday, May 10, 2011

#### William Prusoff Young Investigator Award

Sofia 1 and 2

08:00 AM - 08:45 AM

08:00 Presentation of the William Prusoff Young Investigator Award: Joseph Colacino, Ph.D., President-ISAR.

08:10 13. Development of Countermeasures Against Pathogenic Arenaviruses.

Brian Gowen, Ph.D.

University of Utah, USA

#### Oral Session 3: Retroviruses and Herpesviruses

Chair(s): Rhonda Cardin, Ph.D. and Masanori Baba, Ph.D.

Sofia 1 and 2

08:45 AM - 11:45 AM

08:45 14. Mechanism of HIV-1 Neutralization by an Antibody: Reversible Binding Stalls Entry.

David Kabat, Emily Platt

OHSU, Portland, OR, United States

09:00 15. Beta5 integrin is the major contributor to the alphaV integrin-mediated blockade of HIV-1 replication.

Ester Ballana<sup>1</sup>, Eduardo Pauls<sup>1</sup>, Bonaventura Clotet<sup>1</sup>, Françoise Perron-Sierra<sup>2</sup>, Gordon C Tucker<sup>2</sup>, José A Esté<sup>1</sup>

<sup>1</sup>Irsicaixa - AIDS Research Institute, Badalona, Barcelona, Spain, <sup>2</sup>Institut de Recherches Servier, Departments of Medicinal Chemistry and Cancer Research and Drug Discovery, Croissy sur Seine, France

09:15 BREAK.

09:45 ICAR Business Meeting.

10:00 Invitation to the 25th ICAR - Sapporo, Japan: Amy Patick, Ph.D., Past President-ISAR and Masanori Baba, Ph.D., Local Host-25th ICAR.

10:15 16. Amido tyrosine esters: a promising new approach to antiviral nucleoside phosphonate prodrugs.

Charles E. McKenna<sup>1</sup>, Boris A. Kashemirov<sup>1</sup>, Valeria M. Zakharova<sup>1</sup>, Ivan S. Krylov<sup>1</sup>, Melissa Williams<sup>1</sup>, Marcela KreĎmerová<sup>2</sup>, John C. Drach<sup>3</sup>, John M. Hilfinger<sup>4</sup>

<sup>1</sup>Department of Chemistry, University of Southern California, Los Angeles, CA, United States, <sup>2</sup>IOCB Research Centre, Academy of Sciences of the Czech Republic, Prague, Czech Republic, <sup>3</sup>School of Dentistry, University of Michigan, Ann Arbor, MI, United States, <sup>4</sup>TSRL, Inc., Ann Arbor, MI, United States

10:30 17. Cyclopropavir Inhibits the Normal Function of the Human Cytomegalovirus UL97 Kinase.

Mark Prichard<sup>1</sup>, Caroll Hartline<sup>1</sup>, Rachel Gill<sup>1</sup>, Terry Bowlin<sup>2</sup>, Scott James<sup>1</sup>

<sup>1</sup>University of Alabama at Birmingham, Birmingham, AL, United States, <sup>2</sup>Microbiotix Inc., Worcester, MA, United States

10:45 18. Structural and functional characterization of human cytomegalovirus terminase leads to a new antiviral target.

Marta Nadal<sup>1,2</sup>, Zuzanna Kaczmaraska<sup>1,2</sup>, Philippe J Mas<sup>3</sup>, Alexandre G. Blanco<sup>1,2</sup>, Carme Arnan<sup>1,2</sup>, Maria Solà<sup>2</sup>, Darren J. Hart<sup>3</sup>, Miquel Coll<sup>1,2</sup>

- <sup>1</sup>Institute for Research in Biomedicine (IRB Barcelona), Barcelona, Barcelona, Spain, <sup>2</sup>Institut de Biologia Molecular de Barcelona (CSIC), Barcelona, Barcelona, Spain, <sup>3</sup>European Molecular Biology Laboratory, Grenoble Outstation, Grenoble, Cedex, France
- 11:00 19. *In Vivo* Efficacy of N-methanocarbothymidine (N-MCT) against Herpes simplex Virus Type 2 in Neonatal Guinea Pigs. Rhonda Cardin<sup>1</sup>, Fernando Bravo<sup>1</sup>, Clark Jennifer<sup>1</sup>, Earwood Julie<sup>1</sup>, Robert Glazer<sup>2</sup>, Aquilur Rahman<sup>3</sup>, David Bernstein<sup>1</sup>  
<sup>1</sup>Cincinnati Children's Hospital Medical Center, Cincinnati, OH, United States, <sup>2</sup>Georgetown University, Washington, D.C., District of Columbia, United States, <sup>3</sup>N & N Scientific, Inc., Rockville, MD, United States
- 11:15 20. CMX001 Potentiates the Efficacy of Acyclovir in Herpes Simplex Virus Infections. Mark Prichard<sup>1</sup>, Earl Kern<sup>1</sup>, Carol Hartline<sup>1</sup>, Emma Harden<sup>1</sup>, Randall Lanier<sup>2</sup>, Debra Quenelle<sup>1</sup>  
<sup>1</sup>University of Alabama at Birmingham, Birmingham, AL, United States, <sup>2</sup>Chimerix Inc., Durham, NC, United States
- 11:30 21. Safety and Human Pharmacokinetics of AIC316, a Potent Helicase-Primase Inhibitor of Herpes Simplex Virus (HSV). Alexander Birkmann, Dirk Kroppeit, David McCormick, Holger Zimmermann, Helga Ruebsamen-Schaeff  
AiCuris GmbH & Co. KG, Wuppertal, Germany

### Clinical Symposium

Chair(s): Richard Whitley, M.D. and Paul Griffiths, M.D.

Sofia 1 and 2

02:00 PM - 04:00 PM

## Wednesday, May 11, 2011

### Oral Session 4: Mini-Symposium - Medicinal Chemistry and Drug Discovery

Chair(s): Chris Meier, Ph.D., University of Heidelberg, Germany

Sofia 1 and 2

08:00 AM - 12:00 PM

- 08:00 22. Discovery of 2'-Deoxy-2'- $\alpha$ -Fluoro-2'- $\beta$ -C-Methyl Purine Nucleotide Prodrugs for the Treatment of Hepatitis C Virus Infection. Michael Sofia, Ph.D. Pharmasset, Inc., USA
- 08:40 23. Structure- and Fragment-based Discovery of Antivirals Against Emerging and Neglected RNA Viruses. Rolf Hilgenfeld, Ph.D. University of Luebeck, Germany
- 09:20 BREAK.
- 09:50 24. The Discovery of Tegobuvir: From a BVDV Screening Hit to an Efficacious HCV Antiviral. Gerhard Puerstinger, Ph.D. Universitat Innsbruck, Austria
- 10:30 25. The Discovery of Potent HCV NS5A Inhibitors. John Link, Ph.D. Gilead Sciences, Inc., USA
- 11:10 26. Carbocyclic Nucleosides as Potential HIV Antivirals. Chris Meier, Ph.D. University of Heidelberg, Germany

### Oral Session 5: Respiratory Viruses, Emerging Viruses and Biodefense

Chair(s): Brian Gowen, Ph.D. and Graciela Andrei, Ph.D.

Sofia 1 and 2

01:00 PM - 03:30 PM

- 13:00 27. Plenary: Molecular Mechanisms of Viral Resistance to Nucleotide Analogues, and Implications for Lethal Mutagenesis Strategies. Esteban Domingo, Ph.D. Campus de Cantoblanco, Spain
- 13:45 28. Important Role For Protein Kinase C- $\alpha$  In Combined Pneumolysin/Influenza A Virus-Induced Pulmonary Endothelial Hyperpermeability. Júlia Vergara-Alert<sup>1</sup>, Supriya Sridhar<sup>2</sup>, Guang Yang<sup>2</sup>, Ian Davis<sup>3</sup>, Trinad Chakraborty<sup>4</sup>, Ayub Darji<sup>1</sup>, Rudolf Lucas<sup>2</sup>  
<sup>1</sup>Centre de Recerca en Sanitat Animal (CRESA), UAB-IRTA, Bellaterra, Barcelona, Spain, <sup>2</sup>Vascular Biology Center, Medical College of Georgia, Augusta, Georgia, United States, <sup>3</sup>Veterinary Biosciences, Ohio State University, Columbus, Ohio, United States, <sup>4</sup>Institute of Medical Microbiology, Justus-Liebig University Giessen, Giessen, Germany
- 14:00 29. 2'- and 4'- Modified Ribonucleoside Analogs Can Inhibit All Four Serotypes of Dengue Virus In Human Primary Dendritic Cells as Competitive Inhibitors and Non-Obligatory Chain Terminators. Hassan Javanbakht<sup>1</sup>, Vincent Leveque<sup>1</sup>, Zhinan Jin<sup>1</sup>, Jerome Deval<sup>2</sup>, Andreas Jekle<sup>2</sup>, Gabrielle Heilek<sup>2</sup>, Han Ma<sup>1</sup>, Klaus Klumpp<sup>1</sup>  
<sup>1</sup>Hoffman-La Roche, Nutley, NJ, United States, <sup>2</sup>Roche, Palo Alto, CA, United States

- 14:15 30. 2009 Pandemic Influenza Virus: What Special for Its HA and NA?  
George F. Gao<sup>1,2</sup>, Christopher J. Vavricka<sup>1</sup>  
<sup>1</sup>CAS Key Laboratory of Pathogenic Microbiology and Immunology, Chaoyang, Beijing, China, <sup>2</sup>Beijing Institutes of Life Science Chinese Academy of Sciences, Chaoyang, Beijing, China
- 14:30 31. Identification of New Druggable Antiviral Targets by Chemical Genetics.  
Richard Y Kao, Kwok-Yung Yuen  
Research Center of Infection and Immunology, State Key Laboratory of Emerging Infectious Diseases, Department of Microbiology, LKS Faculty of Medicine, The University of Hong Kong, Hong Kong, Hong Kong
- 14:45 32. Activities of Viral M2 Channel, Neuraminidase, and RNA Polymerase Inhibitors on Oseltamivir-Resistant H275Y Influenza A (H<sub>1</sub>N<sub>1</sub>) Virus Infections in Mice .  
Donald F. Smee<sup>1</sup>, Min-Hui Wong<sup>1</sup>, E. Bart Tarbet<sup>1</sup>, Justin Julander<sup>1</sup>, Matthew Gross<sup>2</sup>, Jack Nguyen<sup>2</sup>  
<sup>1</sup>Utah State University, Logan, Utah, United States, <sup>2</sup>Adamas Pharmaceuticals, Emeryville, California, United States
- 15:00 33. CMX001 (Hexadecyloxypropyl Cidofovir) Antiviral Activity against Adenovirus in Patients Correlates with Drug Levels and Viral Sensitivity.  
ER Lanier, W Painter, TK Tippin, M Anderson, BM Lampert, H Mommeja-Marin, LC Trost  
Chimerix Inc, Durham, NC, United States
- 15:15 92. Avoidance of Coxsackievirus Drug Resistance by Using a Novel Scheme of Combining Anti-Enteroviral Inhibitors *In Vivo*.  
Ralitsa Vassileva-Pencheva, Angel S. Galabov  
Department of Virology, The Stephan Angeloff Institute of Microbiology, Bulgarian Academy of Sciences, Sofia, Sofia, Bulgaria

### ICAR Banquet Reception

Sofia 1 and 2

07:15 PM - 07:45 PM

### ICAR Banquet and Program

Sofia 1 and 2

07:45 PM - 10:00 PM

### Gertrude Elion Award Lecture

Sofia 1 and 2

08:30 PM - 09:30 PM

- 20:30 Presentation of the Gertrude Elion Award: Joseph Colacino, Ph.D., President-ISAR.
- 20:45 34. Why Develop a Drug for Smallpox, a Disease Which has Already Been Eradicated?  
Earl Kern, Ph.D.  
University of Alabama at Birmingham, USA

**Monday, May 9, 2011**

### Poster Session 1: Retroviruses, Respiratory Viruses, Emerging Viruses and Antiviral Methods

Sofia 3 and Kyota

04:00 PM - 06:00 PM

35. Design, Synthesis and West Nile Protease Inhibitory Activity of Novel Isatin Derivatives.  
Periyasamy Selvam<sup>1</sup>, Priya Srinivasan<sup>2</sup>, Tanvi Khot<sup>2</sup>, R Padmanaban<sup>2</sup>  
<sup>1</sup>Devaki Amma Memorial College of Pharmacy, Malapuram 673634, Kerala, India, <sup>2</sup>Microbiology and Immunology, Georgetown School of Medicine, Washington DC, United States
36. Effects of the Addition of Hiltonol<sup>®</sup> (Poly-ICLC) to a SARS-CoV S Protein Vaccine in Lethal SARS-CoV Mouse Model.  
Dale L. Barnard<sup>1</sup>, Miles Wandersee<sup>1</sup>, Kevin Bailey<sup>1</sup>, Aaron Smith<sup>1</sup>, Zach Vest<sup>1</sup>, John D. Morrey<sup>1</sup>, Andres M. Salazar<sup>2</sup>  
<sup>1</sup>Utah State University, Logan, UT, United States, <sup>2</sup>Oncovir, Inc., Washington, DC, United States
37. Synthesis and Anti-Hiv Activity of D-Peptide Analogs As HIV Fusion Inhibitors.  
Alice Baron<sup>1,2</sup>, Christine Kreuz<sup>3</sup>, Gilles Gosselin<sup>1</sup>, Frederic Lamaty<sup>2</sup>, Jean Martinez<sup>2</sup>, Dominique Surleraux<sup>1</sup>, Claire Pierra<sup>1</sup>, Pascal Clayette<sup>3</sup>  
<sup>1</sup>Laboratoires Idenix, Montpellier, France, <sup>2</sup>Institut des Biomolécules Max Mousseron, Montpellier, France, <sup>3</sup>Bertin Pharma, Fontenay aux Roses, France
38. Activity of Novel Cyclophilin Inhibitors Based on The Polyketide, Sanglifehrin A, Against HIV.  
Michael Bobardt<sup>1</sup>, Steven Moss<sup>2</sup>, Udayan Chatterji<sup>1</sup>, Mohammad Nur-E-Alam<sup>2</sup>, Tony Warneck<sup>2</sup>, Barrie Wilkinson<sup>2</sup>, Philippe Gallay<sup>1</sup>, Matthew Gregory<sup>2</sup>  
<sup>1</sup>The Scripps Research Institute, La Jolla, California, United States, <sup>2</sup>Biotica Technology Ltd, Cambridge, England, United Kingdom
39. Obr-5-340 – A Novel Pyrazolo-Pyrimidine Derivative With Strong Antiviral Activity Against Coxsackievirus B3 *In Vitro* and *In Vivo*.

- Heike Braun<sup>1</sup>, Vadim A. Makarov<sup>2</sup>, Olga B. Riabova<sup>2</sup>, Elena S. Komarova<sup>2</sup>, Martina Richter<sup>1</sup>, Peter Wutzler<sup>1</sup>, Michaela Schmidtke<sup>1</sup>  
<sup>1</sup>Institute of Virology and Antiviral Therapy, Jena University Hospital, Jena, Germany, <sup>2</sup> Institute of Biochemistry, Russian Academy of Science, Moscow, Russia
40. Occurrence of Opportunistic Infections in People Living with HIV/AIDS Following Antiretroviral Therapy in West Bengal, India.  
 Sayan Chakraborty, Mehebubar Rahman, Bibhuti Saha  
 Calcutta School of Tropical Medicine, Kolkata, West Bengal, India
41. Crimean Congo Haemorrhagic Fever Virus: An Emerging Concern For Iran's Public Health.  
 Sadeh Chinikar, Ramin Mirahmadi, Maryam Moradi, Mojtaba Ghiasi, Akram Sadeh, Sahar Khakifrouz, Fereshteh Sadat Varai, Maisam Asl Solaimani  
 Pasteur Institute of Iran, Tehran, Tehran, Iran
42. Antiviral Drug-Resistant Influenza Viruses in Gyeonggi Province, South Korea, From 2005 to 2010.  
 Hangil Cho, Haekun Hong, Sukyoung Mun, Woonho Kim, Hyunkyung Lee, Mihye Yoon, Jongbok Lee  
 Gyeonggi-do Institute of Health and Environment, Suwon, Gyeonggi, South Korea
43. Rigid Amphipathic Fusion Inhibitors (RAFIs) Inhibit Infectivity of Enveloped Viruses by Targeting Envelope Lipids to Prevent Fusion With Cellular Membranes.  
 Che C. Colpitts<sup>1</sup>, Alexey V. Ustinov<sup>2</sup>, Vladimir A. Korshun<sup>2</sup>, Luis M. Schang<sup>1</sup>  
<sup>1</sup>University of Alberta, Edmonton, Alberta, Canada, <sup>2</sup>Russian Academy of Sciences, Moscow, Russia
44. Combine Action Rimantadine and Amizon on Flu Occasion.  
 G. Danilenko<sup>1</sup>, S. Rybalko<sup>2</sup>, T. Bukhtiarova<sup>3</sup>, V. Danilenko<sup>3</sup>, S. Guzhova<sup>4</sup>, O. Esipenko<sup>1</sup>  
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45. An Analogue of the Antibiotic Teicoplanin Inhibits Dengue Virus Entry *in Vitro*.  
 Tine De Burghgraeve<sup>1</sup>, Suzanne JF Kaptein<sup>1</sup>, Jan Paeshuyse<sup>1</sup>, Vanesa Ayala-Nunez<sup>2</sup>, Maria Preobrazhenskaya<sup>3</sup>, Andrea Gamarnik<sup>4</sup>, Jolanda Smit<sup>2</sup>, Johan Neyts<sup>1</sup>  
<sup>1</sup>Rega Institute, KULeuven, Leuven, Belgium, <sup>2</sup>University of Groningen, Groningen, Netherlands, <sup>3</sup>Gause Institute of New Antibiotics, Moscow, Russia, <sup>4</sup>Fundacion Instituto Leloir, Buenos Aires, Argentina
46. Identification of HIV-1 Reverse Transcriptase Dual Inhibitors by A Combined Shape-, 2D-Fingerprint- and Pharmacophore-Based Virtual Screening Approach.  
 Simona Distinto<sup>1</sup>, Francesca Esposito<sup>2</sup>, Johannes Kirchmair<sup>3</sup>, Cristina M. Cardia<sup>4</sup>, Elias Maccioni<sup>4</sup>, Stefano Alcaro<sup>1</sup>, Luca Zinzula<sup>2</sup>, Enzo Tramontano<sup>2</sup>  
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47. Antiviral Activity of The Mek-Inhibitor U0126 Against Pandemic H1N1V and Highly Pathogenic Avian Influenza Virus *In Vitro* and *In Vivo*.  
 Karoline Droebner<sup>1</sup>, Stephan Ludwig<sup>2</sup>, Stephan Pleschka<sup>3</sup>, Oliver Planz<sup>1</sup>  
<sup>1</sup>Friedrich-Loeffler-Institut, Institute of Immunology, Tübingen, BW, Germany, <sup>2</sup>Justus-Liebig Universität, Giessen, Hessen, Germany, <sup>3</sup>Institute of Molecular Virology, Münster, NRW, Germany
48. Targeted Elimination of HIV Infected Cells: Synergistic Combination of Dexamethasone and DEAE As a Paradigm.  
 Najoua Elbourkadi, Lijun Zhao, Ethan Will Taylor  
 Laboratory for Molecular Medicine, University of North Carolina, Greensboro, NC, United States
49. Design and Synthesis of New Isatin Derivatives As HIV-1 Reverse Transcriptase Associated Ribonuclease H Inhibitors.  
 Francesca Esposito<sup>1</sup>, Rita Meleddu<sup>2</sup>, Maria Luisa Sanna<sup>2</sup>, Simona Distinto<sup>3</sup>, Angela Corona<sup>1</sup>, Valeria Cannas<sup>1</sup>, Enzo Tramontano<sup>1</sup>, Maria Cristina Cardia<sup>2</sup>  
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50. Antiviral Activity of The Proteasome Inhibitor VI-01 Against Human and Avian Influenza A Viruses.  
 Emanuel Haasbach<sup>1,2</sup>, Eva-Katharina Pauli<sup>2</sup>, Robert Spranger<sup>2</sup>, David Mitzner<sup>2,3</sup>, Ulrich Schubert<sup>2,3</sup>, Ralf Kircheis<sup>2</sup>, Oliver Planz<sup>2,4</sup>  
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51. *In Silico* Screening of Compounds Targeting Human Cyclin T1 and *In Vitro* Evaluation of Their Anti-HIV-1 Activity.  
 Takayuki Hamasaki, Mika Okamoto, Masanori Baba  
 Division of Antiviral Chemotherapy, Center for Chronic Viral Diseases, Kagoshima University, Sakuragaoka, Kagoshima, Japan
52. Novel 2-Styryl-8-Hydroxyquinolines (8sqs) Derivatives With Anti-HIV-1 Activity Targeting Viral Integrase and Protease.  
 Anton V. Hinkov<sup>1</sup>, Kamelia R. Stanoeva<sup>1,2</sup>, Sevdalina H. Raleva<sup>3</sup>, Vasil G. Atanasov<sup>4</sup>, Petya D. Genova-Kalou<sup>3</sup>, Radka M. Argirova<sup>3</sup>  
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53. A Novel Method - Amenable For High-Throughput Screening Purposes - To Quantify Antiviral Activity Against Viruses That Induce Limited CPE.  
Dirk Jochmans<sup>1</sup>, Bernadette G. van den Hoogen<sup>2</sup>, Pieter Leyssen<sup>1</sup>, Ron A. Fouchier<sup>2</sup>, Johan Neyts<sup>1</sup>  
<sup>1</sup>Rega Institute for Medical Research, University of Leuven (KULeuven), Leuven, Belgium, <sup>2</sup>Department of Virology, Erasmus MC, Rotterdam, Netherlands
54. Effective Prophylactic and Therapeutic Treatment of Yellow Fever Virus With An Adenovirus-Vectored Interferon, Def201, In a Hamster Model.  
Justin G. Julander<sup>1</sup>, Jane Ennis<sup>2</sup>, John Morrey<sup>1</sup>, Jeff Turner<sup>2</sup>  
<sup>1</sup>Institute for Antiviral Research, Utah State University, Logan, UT, United States, <sup>2</sup>Defyrus Inc., Toronto, ON, Canada
55. RNA Interference Mediated Gene Silencing of Influenza A Virus: A Tool for Potent Antiviral Therapy.  
Madhu Khanna<sup>1</sup>, Prashant Kumar<sup>1</sup>, Vikas sood<sup>2</sup>, Roopali Rajput<sup>1</sup>, Akhil Banerjee<sup>2</sup>  
<sup>1</sup>VP Chest Institute, Uni of Delhi, Delhi, India, <sup>2</sup>VP Chest Institute, Uni of Delhi, Delhi, India, <sup>3</sup>National Institute of Immunology, New Delhi, Delhi, India, <sup>4</sup>VP Chest Institute, Uni of Delhi, Delhi, India, <sup>5</sup>National Institute of Immunology, New Delhi, Delhi, India, <sup>6</sup>India
56. Antiviral Effect of The Sulfated Polysaccharide, P-KG03, Against Influenza A Virus.  
Meehyein Kim<sup>1</sup>, So-Yeon Kim<sup>1</sup>, Hae Soo Kim<sup>1</sup>, Joung Han Yim<sup>2</sup>, Woo Ghil Lee<sup>1</sup>, Chong-Kyo Lee<sup>1</sup>  
<sup>1</sup>Korea Research Institute of Chemical Technology, Daejeon, South Korea, <sup>2</sup>Korea Polar Research Institute, Incheon, South Korea
57. Excision of AZT and d<sup>4</sup>T Modulated by Deletions in the  $\beta$ 3- $\beta$ 4 Hairpin Loop of HIV-1 Reverse Transcriptase.  
Mónica Kisić<sup>1</sup>, Tania Matamoros<sup>1</sup>, María Nevot<sup>2</sup>, Jesús Mendieta<sup>1</sup>, Javier Martínez-Picado<sup>2,3</sup>, Miguel A Martínez<sup>2</sup>, Luis Menéndez-Arias<sup>1</sup>  
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58. Doxycycline in Tick-Borne Encephalitis Virus Infection.  
Liubov Kozlovskaya, Yulia Rogova, Galina Karganova  
Chumakov Institute of poliomyelitis and viral encephalitides Russian academy of medical sciences, Institut poliomyelita, Moscow region, Russia
59. Antiarboviral Efficacy of Combined Application of Interferon Inducers and Proteolysis Inhibitor.  
Mykhajloik Kozlovsky<sup>1</sup>, Viktor Lozitsky<sup>2</sup>, Igor Benzel<sup>3</sup>, Ihor Lozynsky<sup>1</sup>, Sergij Lyakhov<sup>4</sup>, Lyudmyla Litvinova<sup>4</sup>  
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60. HIV Full-Replication Technology For Identification of Novel HIV Inhibitors From Multiple Sources.  
Stephan Kremlb<sup>1</sup>, Markus Helfer<sup>1</sup>, Horst Wolff<sup>1</sup>, Andrea Kleinschmidt<sup>1</sup>, Jörg Durner<sup>2</sup>, Philippe Schmitt-Kopplin<sup>3</sup>, Ruth Brack-Werner<sup>1</sup>  
<sup>1</sup>Helmholtz Zentrum München, VIRO, Neuherberg, Germany, <sup>2</sup>Helmholtz Zentrum München, BIOP, Neuherberg, Germany, <sup>3</sup>Helmholtz Zentrum München, IÖC, Neuherberg, Germany
61. An Antiviral Assay to Identify Inhibitors of The Human Metapneumovirus That Is Amenable for High-Throughput Screening Purposes.  
Pieter Leyssen<sup>1</sup>, Bernadette G. van den Hoogen<sup>2</sup>, Dirk Jochmans<sup>1</sup>, Ron A. Fouchier<sup>2</sup>, Johan Neyts<sup>1</sup>  
<sup>1</sup>Rega Institute for Medical Research, University of Leuven (KULeuven), Leuven, Belgium, <sup>2</sup>Department of Virology, Erasmus MC, Rotterdam, Netherlands
62. PHYTOCHIK: Biodiversity As a Source of Selective Inhibitors of CHIKV Replication.  
Pieter Leyssen<sup>1</sup>, Marc Litaudon<sup>2</sup>, Jean-Claude Guillemot<sup>3</sup>, Philippe Rasoanaivo<sup>4</sup>, Jacqueline Smadja<sup>5</sup>, Ameenah Gurib-Fakim<sup>6</sup>, Bruno Canard<sup>3</sup>, Françoise Guéritte<sup>2</sup>  
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63. Synthesis, Influence of Polymer Molecular Weight on Drug Release and Anti-HIV Activity of PEGylated AZT Conjugates.  
Wenjun Li<sup>1</sup>, Peng Zhan<sup>1</sup>, Jingde Wu<sup>1</sup>, Yu Chang<sup>1</sup>, Christophe Pannecouque<sup>2</sup>, Erik De Clercq<sup>2</sup>, Xinyong Liu<sup>1</sup>  
<sup>1</sup>Shandong University, Jinan, Shandong, China, <sup>2</sup>Katholieke Universiteit Leuven, Leuven, Belgium
64. The Protective Action Arbutin and Aminocaproic Acid During The Experimental Influenza.  
V Lozitsky<sup>1</sup>, A Fedchuk<sup>1</sup>, T Grydina<sup>1</sup>, S Rybalko<sup>2</sup>, V Cherednichenko<sup>3</sup>  
<sup>1</sup>I.I. Mechnikov Ukrainian Anti-Plague Research Institute, Odesa, Odesa, Ukrenia, <sup>2</sup>L.V. Gromashevsky Institute of Epidemiology and Infectious Diseases, Kyiv, Kyiv, Ukrenia, <sup>3</sup>Zdorovya Pharmaceutical Company, Kharkiv, Kharkiv, Ukrenia
65. Oseltamivir Influences Hepatic Cytochrome P-450 Dependent Oxidative Metabolism In Influenza Virus Infected Mice.  
Milka M. Mileva, Lora S. Simeonova, Galya G. Genova, Angel S. Galabov  
Department of Virology, The Stephan Angeloff Institute of Microbiology, Bulgarian Academy of Sciences, Sofia, Bulgaria
66. Antiviral Activity of Hemocyanin Isolated From Marine Snail *Rapana Venosa*.  
Nadiya V. Nesterova<sup>1</sup>, Svitlana D. Zagorodnya<sup>1</sup>, Vesela Moshtanska<sup>2</sup>, Pavlina Dolashka<sup>2</sup>, Galina V. Baranova<sup>1</sup>, Anna V. Golovan<sup>1</sup>, Anna O. Kurova<sup>1</sup>  
<sup>1</sup>Institute of Microbiology and Virology of NASU, Kyiv, Ukrenia, <sup>2</sup>Institute of Organic Chemistry, BAS, Sofia, Bulgaria

67. Long-Term Inhibition of HIV-1 Replication In CD4+ T Cells Transduced With A Retroviral Vector Conditionally Expressing The *Escherichia Coli* Endoribonuclease MazF.  
Mika Okamoto<sup>1</sup>, Hideto Chono<sup>2</sup>, Hiroshi Tsuda<sup>2</sup>, Koichi Inoue<sup>2</sup>, Junichi Mineno<sup>2</sup>, Masanori Baba<sup>1</sup>  
<sup>1</sup>Center for Chronic Viral Diseases, Kagoshima University, Kagoshima, Kagoshima, Japan, <sup>2</sup>Center for Cell and Gene Therapy, Takara Bio Inc., Otsu, Shiga, Japan
68. SP600125 Inhibits Orthopoxviruses Replication on A JNK1/2-Independent Manner - Implication As A Potential Anti-Poxviral .  
Anna C.P Pereira<sup>2</sup>, Jamaria A.P. Soares<sup>3</sup>, Flavia G.G Leite<sup>4</sup>, André F. da Cruz<sup>1</sup>, Alice A. Torres<sup>1</sup>, Erna G. Kroon<sup>1</sup>, Paulo C. P. Ferreira<sup>1</sup>, Cláudio A Bonjardim<sup>1</sup>  
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69. Anti-viral Properties and Mode of Action of Standardized Echinacea purpurea Extract Against Highly Pathogenic Avian Influenza Virus (H5N1, H7N7) and Swine-Origin H1N1 (S-OIV).  
Stephan Pleschka<sup>1</sup>, Roland Schoop<sup>2</sup>, James B Hudson<sup>3</sup>  
<sup>1</sup>Institute of Medical Virology, Jutis-Liebig-University, Giessen, Hessen, Germany, <sup>2</sup>Bioforce AG, Roggwil, Bern, Switzerland, <sup>3</sup>Department of Pathology & Laboratory Medicine, University of British Columbia, Vancouver, British Columbia, Canada
70. Novel Chemical Compounds as Potential Blockers to the Swine-Origin Influenza A H1N1 (2009) Virus Replication.  
Roopali Rajput<sup>1</sup>, Prashant Kumar<sup>1</sup>, Binod Kumar<sup>1</sup>, Madhu Khanna<sup>1</sup>, Deepti Sharma<sup>2</sup>, Divya Mathur<sup>2</sup>, Ashok K Prasad<sup>2</sup>  
<sup>1</sup>Department of Microbiology, Faculty of Medical Sciences, University of Delhi, Delhi, Delhi, India, <sup>2</sup>Bio organic Laboratory, Department of Chemistry, University of Delhi, Delhi, Delhi, India
71. Photodynamic Effect of Phthalocyanine-Zn (II) Complexes on Some Enveloped Viruses.  
M. Remickova<sup>1</sup>, L. Mukova<sup>1</sup>, L. Doumanova<sup>1</sup>, V. Mantareva<sup>2</sup>, I. Angelov<sup>2</sup>, V. Kussovski<sup>1</sup>, A. S. Galabov<sup>1</sup>  
<sup>1</sup>The Stephan Angeloff Institute of Microbiology, Bulgarian Academy of Sciences, Sofia, Bulgaria, <sup>2</sup>Institute of Organic Chemistry with Centre of Phytochemistry, Bulgarian Academy of Sciences, Sofia, Bulgaria
72. Classical Swine Fever Outbreak Containment – Antivirals As an Epidemiologically and Economically Viable Alternative to Emergency Vaccination and Culling.  
Stefaan Ribbens<sup>1</sup>, Nesya Goris<sup>2</sup>, Johan Neyts<sup>3</sup>, Jeroen Dewulf<sup>1</sup>  
<sup>1</sup>Ghent University, Merelbeke, Belgium, <sup>2</sup>Okapi Sciences NV, Heverlee, Belgium, <sup>3</sup>KULeuven, Leuven, Belgium
73. Identification and Characterization of OBR-5-340 - A Novel Broad-Spectrum Anti-Human Rhinovirus (HRV) Inhibitor.  
Martina Richter<sup>1</sup>, Vadim A. Makarov<sup>2</sup>, Olga B. Riabova<sup>2</sup>, Peter Wutzler<sup>1</sup>, Michaela Schmidtke<sup>1</sup>  
<sup>1</sup>Institute of Virology and Antiviral Therapy, Jena University Hospital, Jena, Germany, <sup>2</sup>Institute of Biochemistry, Russian Academy of Science, Moscow, Russia
74. Relationship Between Homocysteine Serum Level and Other Blood Analyses Parameters in HIV-Infected Patients.  
Bernardino Roca, José Antonio Ferrero, Maria Cruz del Monte, Elena Resino  
Hospital General, University of Valencia, Castellon, Castellon, Spain
75. Control Of HIV-Infection With Visits Scheduled Every Four or Every Six Months. A Comparative Randomized Study.  
Bernardno Roca, Elena Resino, Maria Cruz del Monte, Manuel Roca  
Hospital General, University of Valencia, Castellon, Castellon, Spain
76. European Virus Archive.  
Jean-Louis Romette  
UNIVMED, Marseille, France
77. HLA-C -35C/T Variant: Genetic Association to HIV-1 Disease Progression and Functional Links.  
Alba Ruiz<sup>1</sup>, Ester Ballana<sup>1</sup>, Beatriz Mothe<sup>1,2</sup>, Eulalia Grau<sup>1</sup>, Bonaventura Clotet<sup>1</sup>, Christian Brander<sup>1,3</sup>, José A. Esté<sup>1</sup>  
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78. Discovery of Novel Natural Neuraminidase Inhibitors (NAI) Based on *In Silico* Screening and Antiviral Investigations.  
Michaela Schmidtke<sup>1</sup>, Judith M. Rollinger<sup>2</sup>, Ulrike Grienke<sup>2</sup>, Nora Seidel<sup>1</sup>, Andi Krumbholz<sup>1</sup>, Peter Wutzler<sup>1</sup>, Klaus R. Liedl<sup>3</sup>, Johannes Kirchmair<sup>3</sup>  
<sup>1</sup>Jena University Hospital, Institute of Virology and Antiviral Therapy, Jena, Germany, <sup>2</sup>University Innsbruck, Institute of Pharmacy/Pharmacognosy, Innsbruck, Austria, <sup>3</sup>University Innsbruck, Institute of Theoretical Chemistry, Innsbruck, Austria
79. Synthesis, Anti-Hiv and Cytotoxic Activity of Some Novel Isatine-Sulfisomidine Derivatives.  
Periyasamy Selvam<sup>1</sup>, Markandavel Chandramohan<sup>2</sup>, Christophe Pannecouque<sup>3</sup>, E De Clercq<sup>3</sup>  
<sup>1</sup>Devaki Amma Memorial college of Pharmacy, Malapuram, Kerala, India, <sup>2</sup>Kamarajar Liver Hospital and Research centre, Madurai, Tamilnadu, India, <sup>3</sup>Rega Institute for Medical Research, Katholieke Universiteit, Leuven, Leuven, Belgium
80. Studies of HIV Integrase Inhibitory Activity of Novel Isatine Derivatives.  
Periyasamy Selvam<sup>1</sup>, Kasthuraiah Maddali<sup>2</sup>, Christophe Marchand<sup>2</sup>, Yves Pommier<sup>2</sup>  
<sup>1</sup>Devaki Amma Memorial College of Pharmacy, Malapuram 676364, Kerala, India, <sup>2</sup>Laboratory of Molecular Pharmacology, NCI, NIH, Bethesda, MD 20892, Bethesda, MD, United States
81. Combined Anti-Influenza Virus Effect of Natural and Synthetic Viral Inhibitors.  
Julia Serkedjieva<sup>1</sup>, Iskra Ivanova<sup>2</sup>  
<sup>1</sup>Institute of Microbiology, Bulgarian Academy of Sciences, Sofia, Bulgaria, <sup>2</sup>Department of Microbiology, Sofia University, Sofia, Bulgaria

82. A Catalytic 3D Model Development of HIV-Integrase and Drug Resistance Understanding By Molecular Dynamics Simulation.  
Ashoke Sharon, Tuniki Balaraju, Chandralata Bal  
Department of Applied Chemistry, Birla Institute of Technology, Mesra, Ranchi, Jharkhand, India
83. Susceptibility to Neuraminidase Inhibitors and M2 Blockers of Some Seasonal Influenza Strains Isolated in Bulgaria 2004–2007.  
Lora Simeonova<sup>1</sup>, Galina Gegova<sup>1</sup>, Lucia Mukova<sup>1</sup>, Angel S. Galabov<sup>1</sup>, Rositza Koceva<sup>2</sup>, Sylvie van der Werf<sup>3</sup>  
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84. Prophylactic Activity of mDEF20<sup>1</sup> Against Vaccinia Virus Respiratory Infections in Mice.  
Donald F. Smee<sup>1</sup>, Min-Hui Wong<sup>1</sup>, Eric Sefing<sup>1</sup>, Ramtin Rahbar<sup>2</sup>, Jane Ennis<sup>2</sup>, Jeffrey D. Turner<sup>2</sup>  
<sup>1</sup>Utah State University, Logan, Utah, United States, <sup>2</sup>Defyrus Inc., Toronto, Ontario, Canada
85. Novel Derivatives of Abacavir – Synthesis and Activity against Human Immunodeficiency Virus-Type <sup>1</sup> in cell culture.  
Kamelia R. Stanoeva<sup>1,2</sup>, Ivanka G. Stankova<sup>3</sup>, Anton V. Hinkov<sup>2</sup>, Ivailo I. Alexiev<sup>4</sup>, Petya D. Genova-Kalou<sup>5</sup>, Radoslav I. Chayrov<sup>3</sup>, Radka M. Argirova<sup>6</sup>  
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86. Efficacy of Zanamivir Administered by Different Routes and at Different Times for Treatment of an Influenza A/CA/04/2009 (H1N1) Virus Infection in Mice.  
Bart Tarbet, Deanna Larson, Min-Hui Wong, Donald Smee  
Institute for Antiviral Research, Utah State University, Logan, Utah, United States
87. Inactivated Vaccine Against Tick-Borne Encephalitis Virus As Surrogate Vaccine Against OMSK Hemorrhagic Fever Virus.  
Liubov Terekhina<sup>1</sup>, Nataliya Pripuzova<sup>2</sup>, Mikhail Vorovitch<sup>2</sup>, Yulia Rogova<sup>2</sup>, Lidiya Romanova<sup>2</sup>, Nataliya Tereshkina<sup>2</sup>, Andrey Timofeev<sup>2</sup>, Galina Karganova<sup>2</sup>  
<sup>1</sup>Federal State Unitary Enterprise on Manufacture of Bacterial & Viral Preparation of Chumakov Institute of Poliomyelitis and Viral Encephalitis of Russian Academy of Medical Sciences, Institut poliomyelita, Moscow region, Russia, <sup>2</sup>Institute of Poliomyelitis and Viral Encephalitis of Russian Academy of Medical Sciences, Institut poliomyelita, Moscow region, Russia
88. Efficacy of Aminocaproic Acid Use for Prevention of Some Infectious Diseases in Organized Collectives.  
V Trihle<sup>1</sup>, V Lozitsky<sup>2</sup>, V Smorgunova<sup>1</sup>, S Pozdnyakov<sup>2</sup>, A Voronkov<sup>3</sup>  
<sup>1</sup>Main Military Medical Clinical Center, Kyiv, Kyiv, Ukrenia, <sup>2</sup>Ukrainian I.I. Mechnikov Anti-Plague Research Institute, Odesa, Odesa, Ukrenia, <sup>3</sup>Research and Design Institute of Chemical Technology “Chemtechnology”, Severodonetsk, Severodonetsk, Ukrenia
89. Polymer-Coupled Systems for Blocking the Viral Fusion <sup>1</sup>. Modeling *in silico* the *in vitro* HIV-1 Entry Inhibitors.  
V. Tsvetkov<sup>1,2</sup>, A. Veselovski<sup>2</sup>, A. Serbin<sup>1,3</sup>  
<sup>1</sup>Biomodulators RC, Health RDF, Moscow, Russia, <sup>2</sup>Inst Biomedical Chemistry, RAMS, Moscow, Russia, <sup>3</sup>Inst Petrochemical Synthesis, RAS, Moscow, Russia
90. Discovery and Development of Orally Active Antivirals for the Treatment of RSV: Identification of BTA9881 and a 2nd Generation Candidate.  
Simon Tucker<sup>1</sup>, Alistair Draffan<sup>1</sup>, Jennifer Fenner<sup>1</sup>, Jega Iswaran<sup>1</sup>, Angela Luttick<sup>1</sup>, Mike McCarthy<sup>2</sup>, Gary Pitt<sup>1</sup>, Jane Ryan<sup>1</sup>  
<sup>1</sup>Biota Holdings Limited, Melbourne, VIC, Australia, <sup>2</sup>MedImmune Inc, Gaithersburg, MD, United States
91. Mechanistic Studies on a Novel Hydrophobic Derivative of Aglycoristocetin With Potent and Broad Activity Against Influenza Viruses.  
Evelien Vanderlinden<sup>1</sup>, Els Vanstreels<sup>1</sup>, Kurt Vermeire<sup>1</sup>, Dirk Daelemans<sup>1</sup>, Pal Herczegh<sup>2</sup>, Ferenc Sztaricskai<sup>2</sup>, Lieve Naesens<sup>1</sup>  
<sup>1</sup>Rega Institute for Medical Research, Leuven, Belgium, <sup>2</sup>Department of Pharmaceutical Chemistry, University of Debrecen, Debrecen, Hungary
92. Avoidance of Cocksackievirus Drug Resistance by Using a Novel Scheme of Combining Anti-Enteroviral Inhibitors *In Vivo*.  
Ralitsa Vassileva-Pencheva, Angel S. Galabov  
Department of Virology, The Stephan Angeloff Institute of Microbiology, Bulgarian Academy of Sciences, Sofia, Sofia, Bulgaria
93. Inhibition of Enveloped Virus Infection of Cultured Cells by Valproic Acid .  
Angela Vázquez-Calvo<sup>1</sup>, Juan-Carlos Sáiz<sup>2</sup>, Francisco Sobrino<sup>1</sup>, Miguel A Martín-Acebes<sup>2</sup>  
<sup>1</sup>CBMSO, (UAM-CSIC), Madrid, Spain, <sup>2</sup>Dpto, Biotecnología, INIA, Madrid, Spain
94. Antiviral Effect of Molluscan Haemocyanines.  
Lyudmila Velkova<sup>1</sup>, Lubomira Nikolaeva-Glomb<sup>2</sup>, Lucia Mukova<sup>2</sup>, Aleksander Dolashki<sup>1</sup>, Pavlina Dolashka<sup>1</sup>, Angel S. Galabov<sup>2</sup>  
<sup>1</sup>Institute of Organic Chemistry with Centre of Phytochemistry 9, Sofia, Sofia, Bulgaria, <sup>2</sup>The Stephan Angeloff Institute of Microbiology, Sofia, Sofia, Bulgaria
95. Novel Inhibitors of Nuclear Translocation of HIV-1 Integrase.  
Kylie Wagstaff, Stephen Rawlinson, Anna Hearps, David Jans  
Monash Uni, Monash, VIC, Australia

96. Development of Antimicrobial Peptides as Topical Microbicides for the Prevention of HIV.  
Karen M Watson<sup>1</sup>, Ashlee D Boczar<sup>1</sup>, Guangshun Wang<sup>2</sup>, Robert W Buckheit Jr.<sup>1</sup>  
<sup>1</sup>ImQuest BioSciences Inc., Frederick, MD, United States, <sup>2</sup>University of Nebraska, Omaha, NE, United States
97. dsRNA Binding Characterization of Full Length Recombinant Wild Type and Mutants Zaire Ebolavirus VP35.  
Luca Zinzula, Francesca Esposito, Daniela Pala, Enzo Tramontano  
Dipartimento di Scienze Applicate ai Biosistemi, University of Cagliari, Cagliari, Italy
98. Role Of Cathepsin A and Lysosomes in The Intracellular Activation of Novel Anti-Papillomavirus Agent GS-9191.  
Gabriel Birkus<sup>1</sup>, Nilima Kutty<sup>1</sup>, Christian Frey<sup>1</sup>, Riri Shribata<sup>1</sup>, Tsuifen Chou<sup>2</sup>, Carston Wagner<sup>2</sup>, Martin McDermott<sup>1</sup>, Tomas Cihlar<sup>1</sup>  
<sup>1</sup>Biology Department, Gilead Sciences, Foster City, CA, United States, <sup>2</sup>Department of Medicinal Chemistry, College of Pharmacy, University of Minnesota, Minneapolis, MN, United States
99. Dioxolane L-Nucleoside Analogs Prevent Varicella-Zoster Virus Replication in Fibroblasts and Skin Organ Culture.  
Chandray De<sup>1</sup>, Satish Chavre<sup>2</sup>, Chung. K. Chu<sup>2</sup>, Jennifer Moffat<sup>1</sup>  
<sup>1</sup>SUNY Upstate Medical University, Syracuse, NY, United States, <sup>2</sup>University of Georgia, Athens, GA, United States
100. Evaluation of Approved Antivirals for Inhibition of Xenotropic Murine Leukemia-Related Virus (XMRV) in Cell-Based Assays.  
Tracy L Hartman, Robert W Buckheit Jr  
ImQuest Biosciences, Frederick, MD, United States
101. The Design and Synthesis of Pyrrole-Carbaldehydes as HIV-1 Integrase Strand-Transfer Inhibitors.  
Raymond Hewer<sup>1</sup>, Telisha Traut<sup>1,2</sup>, Bradley Williams<sup>2</sup>, Judy Coates<sup>1</sup>  
<sup>1</sup>Mintek, Johannesburg, Gauteng, South Africa, <sup>2</sup>University of Johannesburg, Johannesburg, Gauteng, South Africa
102. Identification and Characterization of Azolo-1,3-benzoxazines and Condensed Benzopyrans as Potent Non-nucleoside Inhibitors of Orthopoxviruses.  
Yuri Klimochkin<sup>1</sup>, Vitalij Osyannin<sup>1</sup>, Natalia Sidorina<sup>1</sup>, Marina Leonova<sup>1</sup>, Evgeny Belanov<sup>2</sup>, Olga Serova<sup>2</sup>, Sergey Balakhin<sup>2</sup>, Nikolay Bormotov<sup>2</sup>  
<sup>1</sup>State Technical University, Samara, Samara rgn., Russia, <sup>2</sup>FSRI SRC VB "Vector", Koltsovo, Novosibirsk rgn., Russia
103. Differential Expression of Host Cellular Factors upon HIV-1 Reactivation.  
Paula Ordóñez Suarez, Takayuki Hamasaki, Masanori Baba, Mika Okamoto  
Division of Antiviral Chemotherapy, Center for Chronic Viral Diseases, Kagoshima University, Kagoshima, Kagoshima, Japan
104. Recycling of HIV Particles is Required for Infection by Endocytosed Virus After Cell to Cell Transfer.  
Marc Permanyer, Ester Ballana, José A. Esté  
IrsiCaixa, AIDS Research Institut, Badalona, Barcelona, Spain
105. Inhibition of influenza virus-induced NF-κB and ERK activation can simultaneously reduce both, virus titres and cytokine expression *in vitro* and *in vivo*.  
Ruth Pinto<sup>1</sup>, Susanne Herold<sup>2</sup>, Lidija Cakarova<sup>2</sup>, Katrin Hoegner<sup>2</sup>, Jürgen Lohmeyer<sup>2</sup>, Oliver Planz<sup>3</sup>, Stephan Pleschka<sup>1</sup>  
<sup>1</sup>Institute of Medical Virology, Justus-Liebig-University, Giessen, Hessen, Germany, <sup>2</sup>Department of Internal Medicine, University of Giessen Lung Centre, Giessen, Hessen, Germany, <sup>3</sup>Friedrich-Loeffler-Institute (FLI), Tübingen, Baden-Württemberg, Germany
106. A Viable Human Influenza A Virus Lacking Neuraminidase (NA) Activity – Isolation and Characterization.  
Martina Richter<sup>1</sup>, Sandor Nietzsche<sup>2</sup>, Elke Bogner<sup>3</sup>, Peter Wutzler<sup>1</sup>, Michaela Schmidtke<sup>1</sup>  
<sup>1</sup>Institute of Virology and Antiviral Therapy, Jena University Hospital, Jena, Germany, <sup>2</sup>Centre of Electron Microscopy, Jena University Hospital, Jena, Germany, <sup>3</sup>Institute of Virology, Charité University Hospital, Berlin, Germany
107. Favipiravir (T-705) Treatment of Experimental Arenaviral Infection Initiated after the Onset of Clinical Disease.  
Brian B. Gowen<sup>1</sup>, Michelle Mendenhall<sup>1</sup>, Andrew Russell<sup>1</sup>, Donald F. Smee<sup>1</sup>, Yousuke Furuta<sup>2</sup>  
<sup>1</sup>Utah State University, Logan, Utah, United States, <sup>2</sup>Toyama Chemical Company, Ltd., Toyama, Japan

**Tuesday, May 10, 2011**

## **Poster Session 2: Hepatitis Viruses, Herpes Viruses, Pox Viruses, Other Antiviral Agents and Medicinal Chemistry**

Sofia 3 and Kyoto

04:00 PM - 06:00 PM

108. Identification of Alphavirus Inhibitors by Using Virus-Based Assays and a Chikungunya Replicon Cell Line.  
Tero Ahola<sup>1</sup>, Leena Pohjala<sup>1,2</sup>, Pasi Kaukinen<sup>1</sup>, Age Utt<sup>3</sup>, Margus Varjak<sup>3</sup>, Andres Merits<sup>3</sup>, Päivi Tammela<sup>2</sup>  
<sup>1</sup>Institute of Biotechnology, University of Helsinki, Helsinki, Finland, <sup>2</sup>Centre for Drug Research, Faculty of Pharmacy, University of Helsinki, Helsinki, Finland, <sup>3</sup>Institute of Technology, University of Tartu, Tartu, Estonia
109. New Antiviral Substances of Indoloquinoline and Diphenyl Nature.  
Georgiy V. Antonovych<sup>1</sup>, Olena Bogorad-Kobelska<sup>1</sup>, Nadia M. Zholobak<sup>1</sup>, Sergiy A. Lyakhov<sup>2</sup>, Maria O. Shibinska<sup>2</sup>, Sergiy A. Andronati<sup>2</sup>, Mykola Ya. Spivak<sup>1</sup>  
<sup>1</sup>D.K. Zabolotny Institute of Microbiology and Virology NAS of Ukraine, Kyiv, N/A, Ukraine, <sup>2</sup>V. Bogatsky Physicochemical Institute NAS of Ukraine, Odesa, N/A, Ukraine
110. Pegasys As A Second Line of Effective Treatment Plan For G3 Non Responders of Conventional Therapy.  
Binish G Arshad<sup>1</sup>, Abida Raza<sup>2</sup>, Samina Shakeel<sup>1</sup>, Muhammad A Anwar<sup>3</sup>  
<sup>1</sup>Quaid-i-Azam University, Islamabad, Pakistan, <sup>2</sup>Nuclear Medicines Oncology and Radiotherapy Institute, Islamabad, Pakistan, <sup>3</sup>PAEC General Hospital, Islamabad, Pakistan

111. Effective Treatment Plan For G3 Patients.  
Binish G. Arshad<sup>1</sup>, Samina Shakeel<sup>1</sup>, Abida Raza<sup>2</sup>, Muhammad A. Anwar<sup>3</sup>  
<sup>1</sup>Quaid-i-Azam University, Islamabad, Pakistan, <sup>2</sup>Quaid-i-Azam University, Islamabad, Pakistan, <sup>3</sup>NORI, Islamabad, Pakistan, <sup>4</sup>PAEC, Hospital, Islamabad, Pakistan
112. Cost Effective Rapid Virological Response Guided Peginterferon Therapy Plan In HCV Genotype 3 Pakistani Population.  
Hafsa Aziz<sup>1</sup>, Abida Raza<sup>1</sup>, Uzma Adeeb<sup>2</sup>, Amin Athar<sup>3</sup>, Muzaffar L Gill<sup>2</sup>  
<sup>1</sup>Nuclear Medicines Oncology and Radiotherapy Institute, Islamabad, Pakistan, <sup>2</sup>Islamabad Specialist Clinic, Islamabad, Pakistan, <sup>3</sup>IBB Punjab University, Lahore, Pakistan
113. Antiviral Activity of *Cymbopogon nardus* (L.) Rendle Fractions Against HSV-1.  
Adibah A. Bahtiar<sup>1</sup>, Nazlina Ibrahim<sup>1</sup>, Ismail Ahmad<sup>2</sup>  
<sup>1</sup>Universiti Kebangsaan Malaysia, Bangi, Selangor, Malaysia, <sup>2</sup>Universiti Malaysia Sarawak, Sarawak, Sarawak, Malaysia, <sup>3</sup>Malaysia
114. Amino Acid Substitutions at Residue 207 of Viral Capsid Protein 1 (VP1) Confer Pleconaril Resistance in Coxsackievirus B3 (CVB3).  
Heike Braun<sup>1</sup>, Vadim A. Makarov<sup>2</sup>, Olga B. Riabova<sup>2</sup>, Peter Wutzler<sup>1</sup>, Michaela Schmidtke<sup>1</sup>  
<sup>1</sup>Institute of Virology and Antiviral Therapy, Jena University Hospital, Jena, Germany, <sup>2</sup>Laboratory of Biochemistry of Stresses of Microorganisms, RAS Institute of Biochemistry, Moscow, Russia
115. Engineering Genetic Suppressor Elements against Hepatitis C Virus.  
Zhilei Chen, Rudo Simeno  
Texas A&M University, College Station, TX, United States
116. 3',5'-di-O-Trityluridine Inhibits Flavivirus (Dengue and Yellow Fever Virus) Replication and Targets the Viral RNA Dependent RNA Polymerase.  
Tine De Burghgraeve<sup>1</sup>, Suzanne JF Kaptein<sup>1</sup>, Kai Dallmeier<sup>1</sup>, Barbara Selisko<sup>2</sup>, Michael Jacobs<sup>3</sup>, Bruno Canard<sup>2</sup>, Arthur Van Aerschoot<sup>1</sup>, Johan Neyts<sup>1</sup>  
<sup>1</sup>Rega Institute, KU Leuven, Leuven, Belgium, <sup>2</sup>Université de la Méditerranée, Marseille, France, <sup>3</sup>Royal Free & University College Medical School, London, United Kingdom
117. Identification of a Novel Antiviral Drug Targeting at Host Apoptotic Responses.  
Linlin Gu, Qianjun Li  
University of Alabama at Birmingham, Birmingham, Alabama, United States
118. New Caledonian Plants As a Source of Dengue Virus Inhibitors.  
Jean-Claude Guillemot<sup>2</sup>, Pierre-Marie Allard<sup>3</sup>, Paul Coulerie<sup>1</sup>, Cecilia Eydoux<sup>2</sup>, Françoise Gueritte<sup>3</sup>, Edouard Hnawia<sup>1</sup>, Canard Bruno<sup>2</sup>, Litaudon Marc<sup>3</sup>  
<sup>1</sup>Laboratoire de chimie des substances naturelles, LIVE-UNC EA 4243, Université de la Nouvelle-Calédonie, Nouméa, BP R4 98858, New Caledonia, <sup>2</sup>AFMB-ESIL, UMR 6098, Universités d'Aix-Marseille I et II, Marseille, Cedex 09, France, <sup>3</sup>Centre de Recherche de Gif ICSN, CNRS, Gif-sur-Yvette, 91198, France
119. Silibinin Abolish the Enhanced Expression of Fibrosis-Related Molecules Caused by Hepatitis C Virus E2 Protein.  
Ming-Ju Hsieh<sup>1</sup>, Yen-Chen Liu<sup>3</sup>, Tzy-Yen Chen<sup>2</sup>, Hui-Ling Chiou<sup>3,4</sup>  
<sup>1</sup>Institute of Biochemistry and Biotechnology, Chung Shan Medical University, Taichung, Taiwan, <sup>2</sup>Department of Internal Medicine, Chung Shan Medical University Hospital, Taichung, Taiwan, <sup>3</sup>School of Medical Laboratory and Biotechnology, Chung Shan Medical University, Taichung, Taiwan, <sup>4</sup>Department of Clinical Laboratory, Chung Shan Medical University Hospital, Taichung, Taiwan
120. Antihelminthic Activities of Some Medical Plants From The Lamiaceae.  
Kalina A. Kostova<sup>1</sup>, Anton V. Hinkov<sup>1</sup>, Stoyan A. Shishkov<sup>1</sup>, Daniel G. Todorov<sup>1</sup>, Milena A Dimitrova<sup>2</sup>, Zhenya P. Yordanova<sup>2</sup>, Veneta M. Kapchina-Toteva<sup>2</sup>  
<sup>1</sup>"St. Kliment Ohridski" University, Faculty of Biology, Laboratory of Virology, Sofia, Sofia, Bulgaria, <sup>2</sup>"St. Kliment Ohridski" University, Faculty of Biology, Department of Plant Physiology, Sofia, Sofia, Bulgaria
121. Antiviral Activity of A Thioglycoside Derivative Mimicking Tunicamycin Structure.  
Ewelina Krol<sup>1</sup>, Dawid Nidzworski<sup>1</sup>, Grazyna Pastuch-Gawolek<sup>2</sup>, Grzegorz Gryniewicz<sup>3</sup>, Wieslaw Szeja<sup>2</sup>, Boguslaw Szewczyk<sup>1</sup>  
<sup>1</sup>University of Gdansk, Gdansk, Poland, <sup>2</sup>Silesian Technical University, Gliwice, Poland, <sup>3</sup>Pharmaceutical Institute, Warsaw, Poland
122. Hepatitis E Virus (HEV) Proteome and RNA Silencing Suppressors (RSS): A Search.  
Amit Kumar, Subrat K Panda, Hemlata Durgapal  
All India Institute of Medical Sciences, New Delhi, Delhi, India
123. Investigation of the Effects on Early Secretory Pathway in Cultured Cells and Potential Application of Antiviral Substances.  
V. Levakova, A. S. Galabov  
Department of Virology, The Stephan Angeloff Institute of Microbiology, Bulgarian Academy of Sciences, Sofia, Sofia, Bulgaria
124. Virucidal Activity of Calluses' Extracts From Tobacco-Plants.  
V Lozitsky, A Fedchuk, T Grydina, L Mudryk, L Shitikova, L Socheslo  
Ukrainian I.I. Mechnikov Anti-Plague Research Institute, Odesa, Odesa, Ukraine
125. Impact of HIV Coinfection On State of Immunology of Patients With Chronic HCV-Infection.  
Natallia V. Matsieuska, Vladimir M. Tsytkunov  
Medical University, Grodno, GR, Belarus
126. Styrylpyrone Derivative of *Goniotalamus Umbrosus* Inhibit HSV-1 Infection During Viral Early Replication Cycle.  
Norefrina S. Md Nor, Nazlina Ibrahim  
Universiti Kebangsaan Malaysia, Bangi, Selangor, Malaysia, Malaysia

127. Hepatitis C Virus Vaccine Candidates From Chimeric Hepatitis B Core Virus-Like Particles Carrying Different Fragments of HCV Non-Structural Protein 3.  
Marija Mihailova<sup>1</sup>, Anastasija Dovbenko<sup>1</sup>, Janis Bogans<sup>1</sup>, Andreas Walker<sup>2</sup>, Velta Ose<sup>1</sup>, Irina Sominskaya<sup>1</sup>, Sergei Viazov<sup>2</sup>, Pauls Pumpens<sup>1</sup>  
<sup>1</sup>Latvian Biomedical Research and Study Centre, Riga, Latvia, <sup>2</sup>Institute of Virology, Essen University Hospital, Essen, Germany
128. The Crimean Congo Hemorrhagic Fever European Consortium: Modern Approaches to Diagnostics, Epidemiology, Prevention, Therapy and Preparedness.  
Ali Mirazimi<sup>1</sup>, Jerome Weinbach<sup>2</sup>, Manfred Weidmann<sup>3</sup>, Anna Papa-Konidari<sup>4</sup>, Peter Leyssen<sup>5</sup>, Gülay Korukluoğlu<sup>6</sup>, Friedemann Weber<sup>7</sup>  
<sup>1</sup>Swedish Institute for Infectious Disease Control, Stockholm, Sweden, <sup>2</sup>Inserm-Transfert, Paris, France, <sup>3</sup>Universitätsmedizin Göttingen, Göttingen, Germany, <sup>4</sup>Aristotelio Panepistimio Thessalonikis, Thessalonikis, Greece, <sup>5</sup>Katholieke Universiteit Leuven, Leuven, Belgium, <sup>6</sup>Refik Saydam National Public Health Agency, Ankara, Turkey, <sup>7</sup>Philipps Universität Marburg, Marburg, Germany
129. Nitazoxanide is an Indirect Inhibitor of HCV Replication Through Modulation of Cellular Kinase CKI Alpha to Enhance HCV NS5A Hyperphosphorylation.  
Abigail Montero, Prasanth Viswanathan, Chansuek Yon, Brent Korba  
Georgetown University Medical Center, Washington, DC, United States
130. Adenosine Deaminase-Like Protein 1 (ADAL1) Catalyzes Removal of Different Alkyl Groups From N6- Or O6-Substituted Purine Or 2-Aminopurine Nucleoside Monophosphates.  
Eisuke Murakami, Haiying Bao, Ralph Mosely, Jinfa Du, Michael J Sofia, Phillip A Furman  
Pharmasset, Inc, Princeton, New Jersey, United States
131. Inhibition of Human Cytomegalovirus Replication by Tricin (4',5,7-Trihydroxy-3',5'-Dimethoxyflavone).  
Tsugiyu Murayama<sup>1</sup>, Ying Li<sup>1,2</sup>, Rie Yamada<sup>1</sup>, Hidetaka Sadanari<sup>1</sup>, Keiko Matsubara<sup>1</sup>, Yuuzo Tuchida<sup>2</sup>, Mamoru Koketsu<sup>3</sup>, Kunitomo Watanabe<sup>3</sup>  
<sup>1</sup>Hokuriku University, Kanazawa, Ishikawa, Japan, <sup>2</sup>Hououdou Co. Ltd., Shinagawa, Tokyo, Japan, <sup>3</sup>Gifu University, Gifu, Japan
132. Identification of Bicyclic Sulfone Inhibitors of HHV-6 Targeting The HHV-6 U77 Helicase.  
Lieve Naesens<sup>1</sup>, Graciela Andrei<sup>1</sup>, Robert Snoeck<sup>1</sup>, Daniel Gerry<sup>2</sup>, Joseph E. Banning<sup>2</sup>, Phillip D. Wilkerson<sup>2</sup>, Zoe M. Renew<sup>2</sup>, Chad E. Stephens<sup>2</sup>  
<sup>1</sup>Rega Institute for Medical Research, K.U.Leuven, Leuven, Belgium, <sup>2</sup>Department of Chemistry and Physics, Augusta State University, Augusta, GA, United States
133. Antiviral Effect of Oxoglaucine in Combination with Some Enterovirus Replication Inhibitors.  
Lubomira Nikolaeva-Glomb, Adelina Stoyanova, Anna Metodieva, Angel S. Galabov  
The Stephan Angeloff Institute of Microbiology, Bulgarian Academy of Sciences, Sofia, Sofia, Bulgaria
134. Antiadenoviral Assay, Based on The Quantitative Detection of Infected Cells Containing Virus-Induced Intranuclear Inclusion Bodies.  
Lidiya N. Nosach  
Institute of Microbiology and Virology NASU, Kyiv, Ukrenia
135. Triterpenoids From Platycodon Grandiflorum Inhibit Hepatitis C Virus Replication.  
Sang Jin Park<sup>1</sup>, Jong Hwan Lim<sup>1</sup>, Jae Won Yang<sup>1</sup>, Jung Cheul Shin<sup>1</sup>, Eun-Joo Kim<sup>4</sup>, Joo Won Suh<sup>2</sup>, Soon B. Hwang<sup>3</sup>, Jong Woo Kim<sup>1,2</sup>  
<sup>1</sup>Laboratory of Infectious Disease, B&C Biopharm Co. Ltd., Suwon, Gyeonggi-do, Korea, <sup>2</sup>Division of Bioscience and Bioinformatics, Myongji University, Yongin, Gyeonggi-do, Korea, <sup>3</sup>Ilson Institute of Life Science, Hallym University, Anyang, Gyeonggi-do, Korea, <sup>4</sup>Department of Pharmacology, Korea Institute of Toxicology, Korea Research Institute of Chemical Technology, Daejeon, Chungcheongnam-do, Korea
136. Combinatorial Anti-Arenaviral Therapy With The Small Molecule SKI-1/S1P Inhibitor PF-429242 and Ribavirin.  
Antonella Pasquato<sup>1</sup>, Cylia Rochat<sup>1</sup>, Juan Carlos de la Torre<sup>2</sup>, Stefan Kunz<sup>1</sup>  
<sup>1</sup>University Hospital Center and University of Lausanne, Lausanne, Switzerland, <sup>2</sup>The Scripps Research Institute, La Jolla, CA, United States
137. Generation of dsRNAs Targeting VP1 and VP3 Gene Regions of Coxsackievirus B1 Utilizing Bacteriophage  $\phi$ 6 Polymerase Complex.  
Nikolay M. Petrov<sup>1</sup>, Dennis H. Bamford<sup>2</sup>, Ralitsa Vassileva-Pencheva<sup>1</sup>, Angel S. Galabov<sup>1</sup>  
<sup>1</sup>Department of Virology, The Stephan Angeloff Institute of Microbiology, Bulgarian Academy of Sciences, Sofia, Sofia, Bulgaria, <sup>2</sup>Institute of Biotechnology, University of Helsinki, Helsinki, Helsinki, Finland
138. Inhibition of Herpes- and Adenovirus Replication by Extract of *Artemia Salina* Cysts From Crimean Hypersaline Lakes.  
Olga Yu. Povnitsa<sup>1</sup>, Lidiya N. Nosach<sup>1</sup>, Irina I. Rudneva<sup>2</sup>, Valentin G. Shayda<sup>2</sup>, Nadiya V. Nesterova<sup>1</sup>  
<sup>1</sup>Institute of Microbiology and Virology NASU, Kyiv, Ukrenia, <sup>2</sup>Institute of Biology of the Southern Seas NASU, Sevastopol, Ukrenia
139. European Consortium on antiviral Drug Development: SILVER.  
Jean-Louis Romette, Ernest Gould  
UNIVMED, Marseille, France
140. *In-vitro* Screening for Compounds Active Against Polyomavirus BK: a Seven Year Experience .  
Parmjeet S  
University of Pittsburgh, Pittsburgh, PA, United States
141. Studies on Anti-HSV Activity and Cytotoxicity of *Morinda citrifolia* L Noni Leaf.  
Periyasamy Selvam<sup>1</sup>, Julie M. Breitenbach<sup>2</sup>, Katherine Z. Borysko<sup>2</sup>, John C. John C. Drach<sup>2</sup>

- <sup>1</sup>Devaki Amma Memorial College of Pharmacy, Chelembra, Malapuram, Kerala, India, <sup>2</sup>School of Dentistry and College of Pharmacy, University of Michigan, Michigan, Ann Arbor, MI, United States
142. Antiviral Activity of Carbohydrate-Containing Biopolymers of *Pseudomonas chlororaphis* Subsp. *Aureofaciens*.  
Victoria V. Shepelevitch, Volodymyr V. Shubchynskyy, Ludmila D. Varbanets, Elena A. Kiprianova  
Zabolotny Institute of microbiology and virology, Kiev, Ukraine,
143. European Training Network on (+)RNA Virus Replication and Antiviral Drug Development.  
Frank van Kuppeveld<sup>1</sup>, Eric Snijder<sup>2</sup>, Alexander Gorbalenya<sup>2</sup>, Bruno Canard<sup>3</sup>, Ralf Bartenschlager<sup>4</sup>, Johan Neyts<sup>5</sup>, Andrea Brancale<sup>6</sup>, Chris McGuigan<sup>6</sup>  
<sup>1</sup>Radboud University Nijmegen, Nijmegen, Netherlands, <sup>2</sup>Leiden University Medical Center, Leiden, Netherlands, <sup>3</sup>Université de la Méditerranée, Marseille, France, <sup>4</sup>University Hospital of Heidelberg, Heidelberg, Germany, <sup>5</sup>Rega Institute KU Leuven, Leuven, Belgium, <sup>6</sup>Cardiff University, Cardiff, Wales
144. Ellagitannins as New Highly Efficient Inhibitors of Herpes Simplex Virus Replication and Synergists of Acyclovir.  
Nelly Vilhelmova<sup>1</sup>, Adelina Stoyanova<sup>1</sup>, R. Jacquet<sup>2</sup>, S. Quideau<sup>2</sup>, Angel S. Galabov<sup>1</sup>  
<sup>1</sup>Department of Virology, The Stephan Angeloff Institute of Microbiology, Bulgarian Academy of Sciences, Sofia, Sofia, Bulgaria, <sup>2</sup>Université de Bordeaux, Institut des Sciences Moléculaires (CNRS-UMR 5255), Institut Européen de Chimie et Biologie, Pessac Cedex, France, France
145. *In Vitro* Combination Therapy With Tegobuvir (GS-9190) Is Highly Efficient In Curing Cells From HCV Replicon and In Delaying/Preventing The Development of Antiviral Resistance.  
Inge Vliegen<sup>1</sup>, Jan Paeshuyse<sup>1</sup>, I-hung Shih<sup>2</sup>, Gerhard Pürstinger<sup>3</sup>, Steven Bondy<sup>2</sup>, William A. Lee<sup>2</sup>, Weidong Zhong<sup>2</sup>, Johan Neyts<sup>1</sup>  
<sup>1</sup>Rega Institute, Leuven, Belgium, <sup>2</sup>Gilead Sciences, Inc., Foster City, CA, United States, <sup>3</sup>University of Innsbruck, Innsbruck, Austria
146. Human Papillomavirus Genotype Distribution In Women In Montenegro.  
Danijela Vujošević<sup>1</sup>, Vineta Vuksanovic<sup>1,2</sup>, Mario Poljak<sup>3</sup>, Nebojša Joksimovic<sup>4</sup>  
<sup>1</sup>Institute of Public Health, Podgorica, Montenegro, Yugoslavia, <sup>2</sup>University of Montenegro, Podgorica, Montenegro, Yugoslavia, <sup>3</sup>Institute of Microbiology and Immunology, Ljubljana, Slovenia, Slovenia, <sup>4</sup>Clinical Centre of Montenegro, Podgorica, Montenegro, Yugoslavia
147. Enhanced Cellular Penetration of ODE-(S)-MPMPA Accounts For Its Prolonged Post-Exposure Anti-HCV Activity.  
David L. Wyles<sup>1</sup>, Krysten A. Jones<sup>1</sup>, Nadejda Valiaeva<sup>1,2</sup>, James R. Beadle<sup>1,2</sup>, Robert T. Schooley<sup>1</sup>, Karl Y. Hostetler<sup>1,2</sup>  
<sup>1</sup>University of California, San Diego, La Jolla, CA, United States, <sup>2</sup>Veterans Medical Research Foundation, San Diego, CA, United States
148. Anti-EBV Activity of Hemocyanin Isolated From *Helix Lucorum*.  
Svitlana D. Zagorodnya<sup>1</sup>, Pavlina Dolashka<sup>2</sup>, Galina V. Baranova<sup>1</sup>, Anna V. Golovan<sup>1</sup>, Nadiya V. Nesterova<sup>1</sup>  
<sup>1</sup>Institute Microbiology and virology NASU, Kyiv, Ukrenia, <sup>2</sup>Institute of Organic Chemistry, BAS, Sofia, Bulgaria
149. Investigation of Anti-EBV Activity of Ganciclovir In Combination With Antiflogistics.  
Svitlana D. Zagorodnya<sup>1</sup>, Anna O. Kurova<sup>1</sup>, Galina V. Baranova<sup>1</sup>, O. L. Chyuko<sup>2</sup>, Georgiy I. Danilenko<sup>2</sup>, Nadiya V. Nesterova<sup>1</sup>  
<sup>1</sup>Institute Microbiology and virology NASU, Kyiv, Ukrenia, <sup>2</sup>Institute of Organic Chemistry NASU, Kyiv, Ukrenia
150. Thiazolylthioacetamides as a Novel Class of Potential Antiviral Agents.  
Peng Zhan<sup>1</sup>, Xuwang Chen<sup>1</sup>, Xinyong Liu<sup>1</sup>, Christophe Pannecouque<sup>2</sup>, Lieve Naesens<sup>2</sup>, Erik De Clercq<sup>2</sup>, Ailin Liu<sup>3</sup>, Guanhua Du<sup>3</sup>  
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151. Antiviral Effectivity of Ceria Colloid Solutions.  
Nadiya Zholobak<sup>1</sup>, Alexander Shcherbakov<sup>1</sup>, Vladimir Ivanov<sup>2</sup>, Zoya Olevinskaya<sup>1</sup>, Nikolay Spivak<sup>1</sup>  
<sup>1</sup>Zabolotny Institute of Microbiology and Virology NASU, Kyiv, Ukrenia, <sup>2</sup>Kurnakov Institute of General and Inorganic Chemistry, Moscow, Russia
152. Computer-Aided Design and Evaluation of Novel Anti-Chikv Compounds.  
Marcella Bassetto<sup>1</sup>, Tine De Burghgraeve<sup>2</sup>, Pieter Leyssen<sup>2</sup>, Johan Neyts<sup>2</sup>, Andrea Brancale<sup>1</sup>  
<sup>1</sup>The Welsh School of Pharmacy, Cardiff University, Cardiff, Wales, United Kingdom, <sup>2</sup>Rega Institute for Medical Research, Leuven, Flemish Brabant, Belgium
153. Intravitreal Alkoxyalkyl Esters of Cyclic Cidofovir for Treatment of Ocular Viral Infections.  
James R. Beadle<sup>1</sup>, Lingyun Cheng<sup>2</sup>, Karl Y. Hostetler<sup>1</sup>, William R. Freeman<sup>2</sup>  
<sup>1</sup>Univ. of California, San Diego, La Jolla, CA, United States, <sup>2</sup>Jacobs Retina Center, Univ. of California, San Diego, La Jolla, CA, United States
154. Effect of Molecular Symmetry on Potency in Novel Down-Modulators of the CD4 Receptor.  
Thomas W. Bell<sup>1</sup>, Violeta G. Demillo<sup>1</sup>, Florian Goulinet-Mateo<sup>1</sup>, Rameez Ali<sup>1</sup>, Nicholas C. Pflug<sup>1</sup>, Chiraphorn Khan<sup>1</sup>, Kurt Vermeire<sup>2</sup>, Dominique Schols<sup>2</sup>  
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155. Tripartate Prodrugs of Hydroxy-Containing Compounds.  
María-José Camarasa<sup>1</sup>, Alberto Diez-Torrubia<sup>1</sup>, Silvia Cabrera<sup>1</sup>, Graciela Andrei<sup>2</sup>, Robert Snoeck<sup>2</sup>, Jan Balzarini<sup>2</sup>, Sonsoles Velázquez<sup>1</sup>  
<sup>1</sup>Instituto de Química Médica (CSIC), Madrid, Spain, <sup>2</sup>Rega Institute for Medical Research, K.U. Leuven, Leuven, Belgium

156. Synthesis and Evaluation of Biological Activity of New Aminoadamantane Amides Containing Hydroxycinnamoyl Moiety.  
Maya G. Chochkova<sup>1</sup>, Asya P. Georgieva<sup>1</sup>, Galya I. Ivanova<sup>2</sup>, Ivanka G. Stankova<sup>1</sup>, Tsenka S. Milkova<sup>1</sup>  
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157. Coumarins Hybridized with Heterocycles or Ribonucleosides for Eradication of Hepatitis C Virus.  
Reuben Jih-Ru Hwu<sup>1,2</sup>, Shu-Yu Lin<sup>1</sup>, Shwu-Chen Tsay<sup>1</sup>, R. Singha<sup>1</sup>, J. Neyts<sup>3</sup>  
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158. HSV-1 and Alzheimer's Disease: The Case For Antiviral Treatment.  
Ruth F Itzhaki<sup>1</sup>, Alison L Frost<sup>1</sup>, Matthew A Wozniak<sup>1</sup>  
<sup>1</sup>University of Manchester, Manchester, Lancs, United Kingdom, <sup>2</sup>University of Manchester, Manchester, Lancs, United Kingdom, <sup>3</sup>University of Manchester, Manchester, Lancs, United Kingdom
159. Synthesis and Antiviral Evaluation of N9-[2-(Phosphonomethoxy)ethyl] (PME) Analogues Derived from 8-Substituted Purines.  
Zlatko Janeba<sup>1</sup>, Antonín Holý<sup>1</sup>, Robert Snoeck<sup>2</sup>, Graciela Andrei<sup>2</sup>, Erik De Clercq<sup>2</sup>, Jan Balzarini<sup>2</sup>  
<sup>1</sup>Institute of Organic Chemistry and Biochemistry, AS CR, Prague, Czech Republic, <sup>2</sup>Rega Institute for Medical Research, KU Leuven, Leuven, Belgium
160. Acyclic Nucleoside Phosphonates: Past, Present and Future.  
Zlatko Janeba, Antonín Holý  
Institute of Organic Chemistry and Biochemistry, AS CR, Prague, Czech Republic
161. Design, Synthesis, and Anti-HCV Activity of 2'-Modified-4'-selenonucleosides.  
Lak Shin Jeong<sup>1</sup>, Jin Ha Yu<sup>1</sup>, Hyuk Woo Lee<sup>1</sup>, Jung Hee Choi<sup>1</sup>, Won Jun Choi<sup>1,2</sup>  
<sup>1</sup>Ewha Womans University, Seoul, Seoul, South Korea, <sup>2</sup>Dongguk University, Ilsan, Kyungki-do, South Korea
162. Genome Specific Diagnosis of Influenza Virus Strains by Hairpin-Type Peptide Nucleic Acid.  
Kunihiro Kaihatsu, Nobuo Kato  
Osaka University, Ibaraki, Osaka, Japan
163. Development of Novel Evaluation Method to Anti-influenza Drug Resistance using Docking Study.  
Norihito Kawashita<sup>1,2</sup>, Masashi Yasuda<sup>1</sup>, Yu-Shi Tian<sup>1</sup>, Kousuke Okamoto<sup>1</sup>, Masaya Kawase<sup>3</sup>, Teruo Yasunaga<sup>2</sup>, Tatsuya Takagi<sup>1,2</sup>  
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164. Antiviral Properties of New Cage Compounds.  
Yuri Klimochkin<sup>1</sup>, Marat Baimuratov<sup>1</sup>, Ekaterina Knyazeva<sup>1</sup>, Nadezhda Baleeva<sup>1</sup>, Marina Leonova<sup>1</sup>, Michail Skomorokhov<sup>1</sup>, Evgeny Belanov<sup>2</sup>, Sergey Balakhnin<sup>2</sup>  
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165. Indolylarylsulfones as HIV-1 Non-Nucleoside Reverse Transcriptase Inhibitors. New Cyclic Substituents at the Indole-2-carboxamide.  
Giuseppe La Regina<sup>1</sup>, Antonio Coluccia<sup>1</sup>, Andrea Brancale<sup>2</sup>, Giovanni Maga<sup>3</sup>, Jan Balzarini<sup>4</sup>, Ettore Novellino<sup>5</sup>, Romano Silvestri<sup>1</sup>  
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166. Anti-HCV Drug Development.  
Shu-Yu Lin  
National Tsing Hua University, Hsinchu, Taiwan, Taiwan
167. A Novel Family of Multivalent Compounds Able To Interact With GP120: Anti-Hiv Evaluation and Binding Analysis With Surface Plasmon Resonance.  
Virginia Lozano<sup>1</sup>, Leire Aguado<sup>1</sup>, Bart Hoorelbeke<sup>2</sup>, Marleen Renders<sup>2</sup>, María-José Camarasa<sup>1</sup>, Ana San-Félix<sup>1</sup>, Jan Balzarini<sup>2</sup>, María-Jesús Pérez-Pérez<sup>1</sup>  
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168. Targeting HCV (+) Strand RNA genome by a Novel PNA-neamine Conjugate.  
Dineshkumar Manvar, Nootan Pandey, Virendra N Pandey  
UMDNJ-New Jersey Medical School, Dept. of Biochemistry, Newark, NJ, United States
169. Targeting The Flavivirus Helicase.  
Eloise Mastrangelo<sup>1</sup>, Margherita Pezzullo<sup>2</sup>, Martino Bolognesi<sup>2</sup>, Suzanne Keptein<sup>3</sup>, Johan Neyts<sup>3</sup>, Boris Pastorino<sup>4</sup>, Xavier de Lambellerie<sup>4</sup>, Mario Milani<sup>1</sup>  
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170. Stereoselective Synthesis of Different Types of Nucleotide Prodrugs.  
Chris Meier<sup>1</sup>, Rios Morales Edwain Hander<sup>1</sup>, Arbelo Román Cristina<sup>1</sup>, Lindström Nadine<sup>1</sup>, Balzarini Jan<sup>2</sup>  
<sup>1</sup>Organic Chemistry, Department of Chemistry, Faculty of Sciences, University of Hamburg, Hamburg, Germany, <sup>2</sup>Rega Institute for Medical Research, Katholieke Universiteit Leuven, Leuven, Belgium
171. A Comparison of the ability of wild-type and S282T mutant HCV NS5B to incorporate 2'-a-F-2'-b-C-methylguanosine-5'-monophosphate and 2'-a-OH-2'-b-C-methylguanosine-5'-monophosphate  
Eisuke Murakami, Haiying Bao, Angela M Lam, Christine Espiritu, Shalini Bansal, Phillip A F  
Pharmasset, Inc, Princeton, New Jersey, United States

172. QSAR Analysis of Anti-Influenza (A/H1N1) Activity Of Azolo-Adamantanes.  
Eugene Muratov<sup>1,2</sup>, Ekaterina Varlamova<sup>1</sup>, Anatoly Artemenko<sup>1</sup>, Victor Kuz'min<sup>1</sup>, Pavel Anfimov<sup>3</sup>, Vladimir Zarubaev<sup>3</sup>, Victor Saraev<sup>4</sup>, Oleg Kiselev<sup>3</sup>  
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173. Viral Genome Dynamics during Antiviral Resistance Selection: A First Glimpse into Viral Evolution.  
Simone Musiu, Jan Paeshuyse, Mathy Froeyen, Philippe Lemey, Johan Neyts  
Katholieke Universiteit Leuven, Leuven, Vlaams Brabant, Belgium
174. Structure-Based Design of Small-Molecules That Selectively Inhibit Dengue Virus Methyltransferase.  
Christian G. Noble  
Novartis Institute for Tropical Diseases, 10 Biopolis Road, 05-01 Chromos, Singapore
175. Phosphoramidate Dinucleosides As Inhibitors of Hepatitis C Virus Subgenomic Replicon And NS5B Polymerase Activity.  
S. Priet<sup>1</sup>, I. Zlatev<sup>2</sup>, I. Barvik<sup>3</sup>, J. Neyts<sup>4</sup>, H. Dutartre<sup>1</sup>, B. Canard<sup>1</sup>, F. Morvan<sup>2</sup>, K. Alvarez<sup>1</sup>  
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176. Tick-Borne Flaviviruses Infection In Non-Human Primates.  
Yulia Rogova, Natalia Pripuzova, Larissa Gmyl, Natalia Tereshkina, Liubov Terekhina, Mikhail Vorovich, Karina Grishina, Galina Karganova  
Chumakov Institute of Polimyelitis and Viral Encephalitides Russian academy of medical sciences, Institut poliomyelita, Moscow region, Russia
177. Synthesis of Novel CADA Analog Prodrugs Designed as Down-Modulators of the CD4 Receptor.  
Emily D. Scarbrough<sup>1</sup>, Kurt Vermeire<sup>2</sup>, Dominique Schols<sup>2</sup>, Thomas W. Bell<sup>1</sup>  
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178. Polymer-Cooperative Approach to multi-Blocking the Viruses.  
A. Serbin<sup>1,2</sup>, E. Karaseva<sup>1,2</sup>, O. Alikhanova<sup>1</sup>, V. Tsvetkov<sup>1,3</sup>  
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179. Synthesis and *in vitro* Anti-influenza Activity of New Amino Acids and Peptidomimetics Derivatives of Oseltamivir and Rimantadine .  
Ivanka Stankova<sup>1</sup>, Kiril Chuchkov<sup>1</sup>, Michaela Schmidtke<sup>2</sup>, Angel Galabov<sup>3</sup>  
<sup>1</sup>Department of Chemistry, South-West University "Neofit Rilski", Blagoevgrad, Bulgaria, <sup>2</sup>Jena University Hospital, School of Medicine, Department of Virology and Antiviral Therapy, Jena, Germany, <sup>3</sup>The Stephan Angeloff Institute of Microbiology, Bulgarian Academy of Sciences, Sofia, Bulgaria
180. A Computational Approach To Search Active Peptides As Membrane Fusion Inhibitors of HIV-1.  
Yu-Shi Tian<sup>1</sup>, Norihito Kawashita<sup>1,2</sup>, Chris Verathamjamras<sup>1</sup>, Kousuke Okamoto<sup>2</sup>, Teruo Yasunaga<sup>2</sup>, Masanori Kameoka<sup>2</sup>, Tatsuya Takagi<sup>1,2</sup>  
<sup>1</sup>Graduate School of Pharmaceutical Sciences, Osaka University, Suita, Osaka, Japan, <sup>2</sup>Research Institute for Microbial Diseases, Osaka University, Suita, Osaka, Japan
181. The 3D-Screen Technology, An Innovative Cell-Based Assay To Identify Modulators That Alter Target Protein Conformation: Example With HCV.  
Isabelle Valarché, Amaya Berecibar, Mehdi Lahmar, Philippe Guedat, Majid Mehtali  
Vivalis, Saint Herblain, LA, France
182. Synthesis and Antiviral Activity of 3-Methoxy-2-(phosphonomethoxy)propyl Nucleoside Esters Against HCV and HIV-1.  
Nadejda Valiaeva<sup>1,2</sup>, James R. Beadle<sup>1,2</sup>, David L. Wyles<sup>1</sup>, Robert T. Schooley<sup>1</sup>, Karl Y. Hostetler<sup>1,2</sup>  
<sup>1</sup>University of California, San Diego, La Jolla, CA, United States, <sup>2</sup>Veterans Medical Research Foundation, La Jolla, CA, United States
183. Herpes Simplex Virus Thymidine Kinase Inhibitor GLS122E and Its 6-Deoxy Prodrug GLS361B (Sacrovir™) - Potential for Preventing Viral Disease Recurrence *In Vivo*.  
Ivan B. Yanachkov<sup>1</sup>, Edward J. Dix<sup>2</sup>, Milka I. Yanachkova<sup>1</sup>, Sofya Dvoskin<sup>1</sup>, Wei-Chu Xu<sup>1</sup>, Bryan M. Gebhardt<sup>3</sup>, George E. Wright<sup>1</sup>  
<sup>1</sup>GLSynthesis, Inc., Worcester, MA, United States, <sup>2</sup>Assumption College, Worcester, MA, United States, <sup>3</sup>Louisiana State University Eye Center, New Orleans, LA, United States
184. Anti-HBV Activities of Novel 2', 3'--C-substituted beta-L-nucleoside Analogues.  
Xiao-Xiong Zhou<sup>1</sup>, Staffan Torssell<sup>1</sup>, Olov Wallner<sup>1</sup>, Piaoyang Sun<sup>1</sup>, Tim Shaw<sup>2</sup>, Zhuhui Huang<sup>3</sup>, Charlotte Larsson<sup>4</sup>, Bjorn Kull<sup>4</sup>  
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